

AMENDMENTS TO THE CLAIMS

1. (Currently amended): A method for mediating address translation in a logically partitioned data processing system having a set of logical partitions with an operating system assigned to each logical partition within the set of logical partitions, the method comprising:

associating a different contiguous range of virtual address pages of virtual addresses with each one of said set of logical partitions;

assigning a noncontiguous group of page frames of real memory addresses to each one of said different contiguous range of virtual address pages, each one of said set of logical partitions being assigned a different noncontiguous group of page frames;

receiving from an operating system within a logical partition from the set of logical partitions a request to access a physical resource;

responsive to a determination that the physical resource has been allocated to the logical partition, selectively modifying an address translation table to allow access to the physical resource by the operating system.

2. (Original): The method as recited in claim 1, further comprising:

responsive to a determination that the physical resource is allocated to a different logical partition in the set of logical partitions, refraining from modifying the address translation table.

3. (Original): The method as recited in claim 2, further comprising:

sending a message to the operating system indicating that the request is denied.

4. (Original): The method as recited in claim 1, wherein the address translation table comprises a table of virtual addresses with corresponding physical addresses, wherein the virtual addresses are addresses utilized by the operating system and the physical addresses are addresses corresponding to the physical location of resources within the logically partitioned data processing system.

5. (Original): The method as recited in claim 4, wherein the physical addresses are allocated to various ones of multiple logical partitions in a disjoint fashion.

6. (Original): The method as recited in claim 4, wherein consecutive virtual addresses need not correspond to consecutive physical addresses.

A3. 7. (Currently amended): A computer program product in a computer readable media for use in a logically partitioned data processing system for mediating address translation in a logically partitioned data processing system having a set of logical partitions with an operating system assigned to each logical partition in the set of logical partitions, the computer program product comprising:

instructions for associating a different contiguous range of virtual address pages of virtual addresses with each one of said set of logical partitions;

instructions for assigning a noncontiguous group of page frames of real memory addresses to each one of said different contiguous range of virtual address pages, each one of said set of logical partitions being assigned a different noncontiguous group of page frames;

[[first]] instructions for receiving from an operating system within a logical partition from the set of logical partitions a request to access a physical resource;

~~second~~ instructions, responsive to a determination that the physical resource has been allocated to the logical partition, for selectively modifying an address translation table to allow access to the physical resource by the operating system.

8. (Currently amended): The computer program product as recited in claim 7, further comprising:

[[third]] instructions, responsive to a determination that the physical resource is allocated to a different logical partition in the set of logical partitions, for refraining from modifying the address translation table.

9. (Currently amended): The computer program product as recited in claim 8, further comprising:

fourth instructions for sending a message to the operating system indicating that the request is denied.

10. (Original): The computer program product as recited in claim 7, wherein the address translation table comprises a table of virtual addresses with corresponding physical addresses, wherein the virtual addresses are addresses utilized by the operating system and the physical addresses are addresses corresponding to the physical location of resources within the logically partitioned data processing system.

A3. 11. (Original): The computer program product as recited in claim 10, wherein the physical addresses are allocated to various ones of multiple logical partitions in a disjoint fashion.

12. (Original): The computer program product as recited in claim 10, wherein consecutive virtual addresses need not correspond to consecutive physical addresses.

13. (Currently amended): A system for use in a logically partitioned data processing system for mediating address translation in a logically partitioned data processing system having a set of logical partitions with an operating system assigned to each logical partition in the set of logical partitions, the system comprising:

a different contiguous range of virtual address pages of virtual addresses being associated with each one of said set of logical partitions;

a noncontiguous group of page frames of real memory addresses being assigned to each one of said different contiguous range of virtual address pages, each one of said set of logical partitions being assigned a different noncontiguous group of page frames;

first means for receiving from an operating system within a logical partition from the set of logical partitions a request to access a physical resource;

second means, responsive to a determination that the physical resource has been allocated to the logical partition, for selectively modifying an address translation table to allow access to the physical resource by the operating system.

14. (Original): The system as recited in claim 13, further comprising:
third means, responsive to a determination that the physical resource is allocated to a different logical partition in the set of logical partitions, for refraining from modifying the address translation table.

15. (Original): The system as recited in claim 14, further comprising:
fourth means for sending a message to the operating system indicating that the request is denied.

A3. 16. (Original): The system as recited in claim 13, wherein the address translation table comprises a table of virtual addresses with corresponding physical addresses, wherein the virtual addresses are addresses utilized by the operating system and the physical addresses are addresses corresponding to the physical location of resources within the logically partitioned data processing system.

17. (Original): The system as recited in claim 16, wherein the physical addresses are allocated to various ones of multiple logical partitions in a disjoint fashion.

18. (Original): The system as recited in claim 16, wherein consecutive virtual addresses need not correspond to consecutive physical addresses.

19. (Currently amended): A logically partitioned data processing system, comprising:
a plurality of operating systems executing within the logically partitioned data processing system, each of the plurality of operating systems assigned to one of a plurality of logical partitions;

a different contiguous range of virtual address pages of virtual addresses being associated with each one of said set of logical partitions;

a noncontiguous group of page frames of real memory address being assigned to each one of said different contiguous range of virtual address pages, each one of said set of logical partitions being assigned a different noncontiguous group of page frames;

a plurality of physical resources, each assigned to one of the plurality of logical partitions; and

13 a mediating component for providing address translation between each of a plurality of virtual addresses belonging to various ones of the plurality of operating systems and a corresponding one of a plurality of physical addresses belonging to various ones of the plurality of physical resources; wherein

the mediating component determines whether a requested resource has been allocated to a requesting one of the plurality of operating systems before mapping a one of the plurality of virtual addresses to a one of the plurality of physical addresses belonging to the requested resource; and

if it is determined that the requested resource is not allocated to the logical partition to which the requesting one of the plurality of operating systems is allocated, the mediating component refrains from mapping the one of the plurality of virtual addresses to the one of the plurality of physical addresses belonging to the requested resource.
